Chapter 13

Working with Global Data Sharing Objects

Introduction

The Global Data Sharing object permits the sharing of data from a single master input with up to 16 slave output references.

This chapter describes how to:

- add a Global Data Sharing object
- edit a Global Data Sharing object
- add slaves to the Slaves List
- delete slaves from the Slaves List
- command a Global Data Sharing object
- delete a Global Data Sharing object

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Key Concepts

Global Data Sharing Object

The Global Data Sharing feature distributes changes in value associated with a single master input to a range of between 1 and 16 targeted slave outputs. For example, Outdoor Air data can be distributed and shared between multiple Air Handling Unit (AHU) controllers.

Attributes

The values of an object's attributes determine how the object operates. The Global Data Sharing object attributes described below are listed in the order that they appear on the screen. Entry requirements for these attributes are listed in Table 13-1.

For additional information about the Global Data Sharing object and its attributes, refer to the *Object Dictionary*.

Object Name

Identifies the object on the user interface.

Description

Provides optional information to further describe the object.

Object Type

Indicates the kind of object, such as Schedule, N2 Analog Input, or Global Data. In this case, the object type is Global Data.

Object Category

Determines the general classification of an object to help define user access capability and message routing.

Enabled

Indicates if the object is active and executing an operational condition.

Master

Identifies the attribute reference (object and attribute name) and its value, state, or status that is to be sent to the list of slaves.

Slaves List

Identifies the names (attribute references) of from 1 to 16 Slaves that receive the value, status, or state of the Master.

Refresh Timer

Indicates the amount of time, in minutes, between updates to the Slaves from the Master. Updates initiated by the refresh timer occur in addition to updates initiated by a Change of Value (COV) from the Master.

For example, if the refresh timer attribute's value is 2, the Global Data Sharing object updates the Slaves with information from the Master every 2 minutes and with each COV.

Network Variable Sharing

You can use the Global Data Sharing object to read a value from a BACnet™ device on the network and write a value to an N2 device. Recall that the commanded refresh interval is based on the COV attribute of the source object. The source object can have a very small COV value (for example, 0.0) for N2 commands, however, this forces all messages from the BACnet device to be written to the N2 devices. N2 commands may overload the N30 and use an excessive amount of acquired memory. If the excessive use of memory due to the overloading commands continues, the N30 may reset.

There are two ways you can control this problem:

1. Define a larger, and more realistic, COV value for the source object, thus decreasing COV messages.

   Using this method, the message from the BACnet device is read by the Global Data Sharing object and written to the N2 devices. The flow of information is:

   BACnet device ↔ Global Data Sharing object → N2 devices

- or -

2. If you cannot change the source object's COV value because it may affect the internal operation and application of the BACnet device, you may need to create an intermediary Analog Value object in the N30. This allows the Analog Value object to update with the BACnet device's low COV value. After creating the intermediary Analog Value object, increase its COV value and define it as the source object for the Global Data Sharing object's N2 device destinations. The amount of N2 commands being sent decreases due to the higher COV value and the decrease in the amount of changes.

   Using this method, the message from the BACnet device is read by the Global Data Sharing object, sent to the Analog Value object, sent to the Global Data Sharing object, then sent to N2 devices. The flow of information is:

   BACnet device ↔ Global Data Sharing object → Analog Value object → Global Data Sharing object → N2 devices

Detailed Procedures

Adding a Global Data Sharing Object

To add a Global Data Sharing object:

1. Browse to and highlight the Programming container.
2. Press the F3 (Add) key. The Add Object list appears.
3. Highlight Global Data and press Enter. The Global Data Sharing attribute screen appears (Figure 13-1).

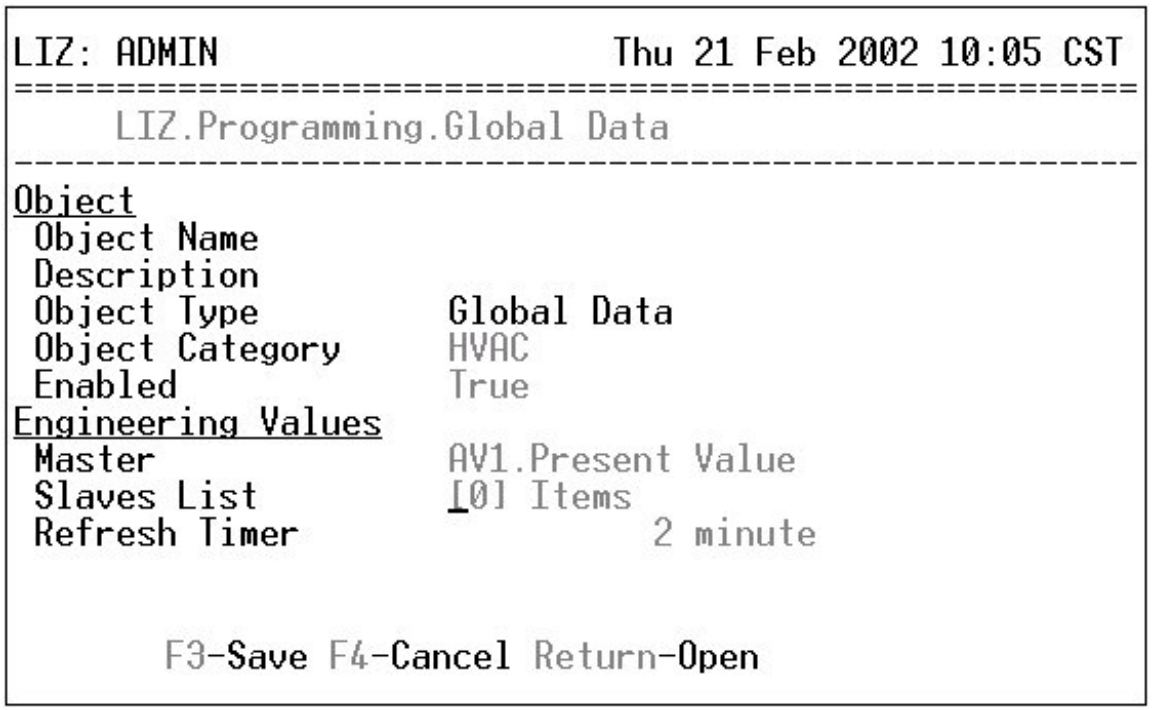

Figure 13-1: Global Data Sharing Object Attribute Screen

4. Fill in the fields using Table 13-1.

Table 13-1: Attribute Entry Requirements

Screen Area	Attribute	Required	Default	Options/Range
Object	Object Name	No	Blank	Maximum 32 characters Invalid characters: @ . ? * $ # : ' " " [ ] If not completed, the system assigns a name.
	Description	No	Blank	Maximum 40 characters
	Object Type	Yes	Global Data	Default is preset and cannot be changed.
	Object Category	Yes	HVAC	Use the Spacebar and Backspace key to view and select options: HVAC, Fire, Security, Services, Administrative.
	Enabled	Yes	True	Use the Spacebar and Backspace key to view and select options: True, False.
Engineering Values	Master	Yes	Blank	Enter the exact object and attribute name containing the data to be distributed. For example, the name of the N2 Analog Input point object representing outdoor air temperature.
	Slaves List	Yes	0 items	Enter the exact object name and attribute names of the object and attribute to receive the data. For example, the names of all Controller objects representing Air Handling Units in the site. Present Value appears by default (AHU1.Present Value).
	Refresh Timer	Yes	2 minutes	0 = No timed refresh (refresh occurs only upon COV)

IMPORTANT: The system does not check to ensure that the master (input) and the slaves (outputs) are mapped to the same data type. Each slave attempts to convert the value being received (if necessary) to the data type defined for itself.

5. Move the cursor to Slaves List.
6. Press Enter. The Global Data Sharing object Slaves List appears (Figure 13-2).

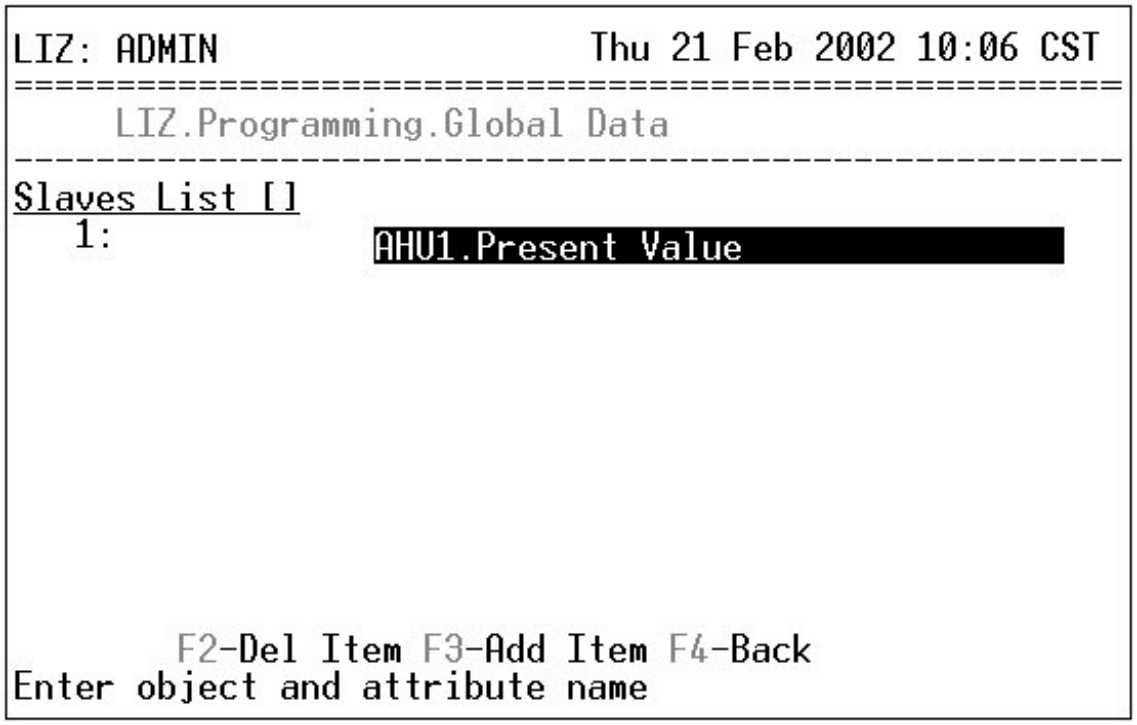

Figure 13-2: Global Data Sharing Object Slaves List

7. Type in an object name and attribute name.
   Example: `AHU1.Present Value.`
8. Press the F3 (Add Item) key and type in another slave.
9. Repeat Steps 7 through 8 for all slaves being added to the list.
10. Press the F4 (Back) key to return to the previous screen.
11. Press the F3 (Save) key.
12. Check the User Assistance area of the screen to verify if the save was successful or if there were errors. If errors were detected, correct them and resave the entries. Once the save is successful, continue with Step 13.
13. Press any key to continue.
14. Press the F4 (Cancel) key to return to the container hierarchy.

Editing a Global Data Sharing Object

To edit a Global Data Sharing object:

Note: To delete or add slaves, refer to the appropriate sections of this chapter.

1. Browse to and highlight a Global Data Sharing object.
2. Press Enter to open the object.

Note: Additional attributes appear. Refer to the *Object Dictionary* for more information.

3. Press the F3 (Edit) key. The Global Data Sharing object attribute screen appears (Figure 13-1).
4. Edit the fields using Table 13-1.
5. Press the F3 (Save) key.
6. Check the User Assistance area of the screen to verify if the save was successful or if there were errors. If errors were detected, correct them and resave the entries. Once the save is successful, continue with Step 7.
7. Press any key to continue.
8. Press the F4 (Cancel) key to return to the container hierarchy.

Adding Slaves to the Slaves List

To add slaves to the Slaves List:

1. Browse to and highlight a Global Data Sharing object.
2. Press Enter to open the object.
3. Press the F3 (Edit) key. The Global Data Sharing object attribute screen appears (Figure 13-1).
4. Move the cursor to Slaves List.
5. Press Enter. The Global Data Sharing object Slaves List appears (Figure 13-2).
6. Press the F3 (Add Item) key to add a blank entry.
7. Type in an object name and attribute name.
8. Repeat Steps 6 and 7 for each new slave.
9. Press the F4 (Back) key to return to the previous screen.
10. Press the F3 (Save) key to save the changes.

11. Check the User Assistance area of the screen to verify if the save was successful or if there were errors. If errors were detected, correct them and resave the entries. Once the save is successful, continue with Step 12.
12. Press any key to continue.
13. Press the F4 (Cancel) key to return to the container hierarchy.

Deleting Slaves from the Slaves List

To delete slaves from the Slaves List:

1. Browse to and highlight a Global Data Sharing object.
2. Press Enter to open the object.
3. Press the F3 (Edit) key. The Global Data Sharing object attribute screen appears (Figure 13-1).
4. Move the cursor to Slaves List.
5. Press Enter. The Global Data Sharing object Slaves List appears (Figure 13-2).
6. Highlight the slave to be deleted.
7. Press the F2 (Delete Item) key.
8. Repeat Steps 6 and 7 for each slave to be removed from the list.
9. Press the F4 (Back) key to return to the previous screen.
10. Press the F3 (Save) key to save the changes.
11. Check the User Assistance area of the screen to verify if the save was successful or if there were errors. If errors were detected, correct them and resave the entries. Once the save is successful, continue with Step 12.
12. Press any key to continue.
13. Press the F4 (Cancel) key to return to the container hierarchy.

Commanding a Global Data Sharing Object

To command a Global Data Sharing object:

1. Browse to and highlight a Global Data Sharing object.
2. Press the F2 (Command) key. The Command field appears.
3. Use the Spacebar and the Backspace key to cycle through the list until the desired command appears. The Global Data Sharing object supports the command listed in Table 13-2.

Table 13-2: Supported Commands

Command	Description
Enable	Updates changes to the slaves list.
Disable	Prevents distribution of Changes-of-Value.

4. Press Enter.

Deleting a Global Data Sharing Object

To delete a Global Data Sharing object:

1. Browse to and highlight a Global Data Sharing object.
2. Press Enter to open the object.
3. Press the Delete key.
4. Press the Tab key to confirm the deletion.

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